

Notice of Allowability

Application No.

10/036,323

Examiner

Thomas L. Dickey

Applicant(s)

HOWER ET AL.

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2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE and amendment filed 05/31/05.
2. ☒ The allowed claim(s) is/are 14,16-18 and 33-36.
3. ☒ The drawings filed on 05 April 2002 and 10 February 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Minhloan Tran
Minhloan Tran
Primary Examiner
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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

IN THE CLAIMS:

Cancel claims 27-32.

REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance:

Claims 14-15,17-18,33-34, and 35-36 are allowed over the references of record because none of these references disclosed or can be combined to yield the claimed invention such as an n-channel DMOS transistor source structure, comprising an n-type source diffusion, ohmically connected to a source metallization; a p-type surface body diffusion which laterally surrounds at least part of said source diffusion, a conductive gate structure which is capacitively coupled to part of said p-type surface body diffusion to define a channel region therein; a p-type buried body diffusion which underlies said channel and at least part of said surface body diffusion; and an ohmic connection between said buried body diffusion and said source metallization; whereby said buried

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body diffusion diverts hole current to bypass said source diffusion, and thereby reduces emission of secondary electrons, and thereby increases the safe operating area of the device, wherein, at the least, the p-type buried body diffusion underlies the conductive gate structure, as recited in claims 14, 33, and 35, or else, at the least, the p-type buried body diffusion is self-aligned to at least part of said source diffusion, as recited in claims 17 and 35.

HUANG 6,437,399 discloses an n-channel DMOS transistor source structure comprising an n-type source diffusion 16, ohmically connected to a source metallization 36, a p-type surface body diffusion 14 which laterally surrounds at least part of said source diffusion 16, a conductive gate structure 26 which is capacitively coupled to part of said p-type surface body diffusion 14 to define a channel region therein, a p-type buried body diffusion 35 which underlies at least part of said surface body diffusion 14; and an ohmic connection between said buried body diffusion 35 and said source metallization 36; whereby said buried body diffusion 35 is capable of diverting hole current to bypass said source diffusion 16, and thereby reducing emission of secondary electrons, and thereby increasing the safe operating area of the device. Note figure 12 and column 2 lines 40-43 and column 3 lines 5-8 of Huang. But in Huang's n-channel DMOS transistor source structure the p-type buried body diffusion does not underlie the conductive gate structure and is not self-aligned to at least part of said source diffusion.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 703-308-6601. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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